

Maryland HIV/AIDS Epidemiological Profile

First Quarter 2011

Data reported through March 31, 2011



Center for HIV Surveillance and Epidemiology
Infectious Disease and Environmental Health Administration
Maryland Department of Health and Mental Hygiene
<http://ideha.dhmmh.maryland.gov>
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Table of Contents

Section I – Background Information	Page 1
Section II – Adult/Adolescent Cases by Jurisdiction	Page 4
Table 1 – Adult/Adolescent HIV Cases by Jurisdiction, Diagnoses during 4/1/2009-3/31/2010	
Table 2 – Adult/Adolescent AIDS Cases by Jurisdiction, Diagnoses during 4/1/2009-3/31/2010	
Table 3 – Adult/Adolescent HIV Cases by Jurisdiction, Alive on 3/31/2010	
Table 4 – CD4 Testing for Adult/Adolescent HIV Cases by Jurisdiction, Alive on 3/31/2010	
Table 5 – HIV Viral Load Testing for Adult/Adolescent HIV Cases by Jurisdiction, Alive on 3/31/2010	

Section I – Background Information

HIV/AIDS Reporting Requirements

The Maryland HIV/AIDS Reporting Act of 2007 went into effect on April 24, 2007. The law expanded HIV/AIDS reporting and required that HIV cases be reported by name. The following highlights the reporting requirements of Health-General Articles 18-201.1, 18-202.1, and 18-205 of the Annotated Code of Maryland, as specified in COMAR 10.18.02.

- Physicians are required to report patients in their care with diagnoses of HIV or AIDS immediately to the Local Health Department where the physician's office is located by mailing DHMH Form 1140. Reports are also accepted by phone.
- Physicians are required to report infants born to HIV positive mothers within 48 hours to the State Health Department by mailing DHMH Form 1140. Reports are also accepted by phone.
- Clinical and infection control practitioners in hospitals, nursing homes, hospice facilities, medical clinics in correctional facilities, inpatient psychiatric facilities, and inpatient drug rehabilitation facilities are required to report patients in the care of the institution with diagnoses of HIV or AIDS within 48 hours to the Local Health Department where the institution is located by mailing DHMH Form 1140. Reports are also accepted by phone. Facilities with large volumes are encouraged to contact the State Health Department to establish electronic reporting.
- Laboratory directors are required to report patients with laboratory results indicating HIV infection (e.g., positive confirmatory HIV diagnostic tests, all CD4 immunological tests, all HIV viral load tests, and all HIV genotype and phenotype tests) within 48 hours to the Local Health Department where the laboratory is located, or if out of state to the Maryland State Health Department, by mailing DHMH Form 4492. Laboratories are encouraged to contact the State Health Department to establish electronic reporting.

Reporting forms and instructions are available at: <http://ideha.dhmmh.maryland.gov/chse/reporting-material.aspx>

For Assistance with HIV/AIDS Reporting

For assistance with reporting, including establishment of routine, electronic, or other alternate methods of reporting to the Health Department, please contact the Center for HIV Surveillance and Epidemiology at the Maryland Department of Health and Mental Hygiene (410-767-5061).

Limitations in the HIV/AIDS Data

This epidemiological profile only contains data for HIV and AIDS cases that have been diagnosed by a health care provider, were reported to the health department by name, and were residents of Maryland at the time of diagnosis. Nationally, it has been estimated that 21% of people living with HIV infection are undiagnosed. In addition, despite a massive effort during which over 17,000 HIV cases were reported after the Maryland HIV reporting law changed on April 24, 2007, not all diagnosed HIV cases previously reported by Maryland's code-based identifier were located and re-reported by name, so the number of living HIV cases is lower than previously reported. In addition, many of the re-reported HIV cases were identified by a recent diagnosis and not by their earliest diagnosis, resulting in an under-reporting of HIV diagnoses before 2001 and an over-reporting of HIV diagnoses from 2001 to 2008. Caution should be exercised in using the number of living HIV cases without AIDS and in interpreting trends in the number of reported HIV diagnoses. In addition, the laboratory data are only available for cases receiving medical care, usually only at facilities in Maryland, and only includes test results that have been reported to the health department.

Stages of a Case of HIV/AIDS

Untreated HIV disease progresses from HIV infection to AIDS to death. These are biological events that occur whether or not a person receives any medical care. For example, a person can be HIV infected but never have an HIV test and so they do not have an HIV diagnosis. A medical provider diagnoses that these biological events have occurred and records them as a medical event. The law requires medical providers to report these medical events to the Health Department, thereby creating a surveillance event.

Time Point	Biological Event	Medical Event	Surveillance Event
1	HIV Infection		
2		HIV Diagnosis	
3			HIV Report
4	AIDS Conditions		
5		AIDS Diagnosis	
6			AIDS Report
7	Death		
8		Death Diagnosis	
9			Death Report

A case of HIV/AIDS can only move through time in one direction, from HIV infection to death report [from time point 1 to time point 9], but may skip over individual stages. Events can occur simultaneously, but usually there is a time lag between them. The time lag between events can be measured in days, months, and years.

For example, the time between HIV infection [time point 1] and the test that diagnoses HIV [time point 2] may be several years, and it may then take several days for the laboratory and physician to report the diagnosis to the health department [time point 3]. In a second example, a person with diagnosed and reported HIV infection [time point 3] may die [time point 7] without developing AIDS, thereby skipping the three AIDS events (conditions, diagnosis, and report [time points 4, 5 and 6]). And in a third example, a person with undiagnosed HIV infection [time point 1] may become sick, enter the hospital, and die [time point 7] of what is later determined to be AIDS. In that situation, HIV diagnosis [time point 2], AIDS diagnosis [time point 5], and death diagnosis [time point 8] would all occur at the same time, and that would probably be many years after the initial HIV infection [time point 1].

Changes in Case Terminology

The terminology for HIV and AIDS cases was changed from earlier epidemiological profiles to be more precise, with Reported Diagnoses replacing Incidence and Living Cases replacing Prevalence. Incidence is a measure of the number of new events (such as HIV infections) in a population during a period of time. Prevalence is a measure of the number of people living with a condition (such as HIV) in a population at a certain time. Prevalence includes both new and old cases. For HIV, Incidence and Prevalence cannot be directly measured and must be estimated using statistical methods. The HIV surveillance system is able to provide the actual number of diagnoses and deaths that are reported in the population.

For this epidemiological profile, the reports received through a certain time (the end of the first quarter) are used to generate the number of diagnoses during the prior years. This one year lag allows for delays in reporting and time to complete investigations. For example, the Reported HIV Diagnoses for 4/1/2009-3/31/2010 are the total of the reported HIV cases with or without an AIDS diagnosis, diagnosed with HIV during 4/1/2009-3/31/2010, as reported by name through 3/31/11.

To calculate the number of Living Cases we count up all of the Reported Diagnoses from the beginning of the epidemic (all the new cases each year) and subtract all of the Reported Deaths. For example, the Total Living HIV Cases on 3/31/2010 are the total of the reported HIV Cases with or without an AIDS diagnosis and not reported to have died as of 3/31/2010 as reported by name through 3/31/2011.

Changes in this Epidemiological Profile

This quarterly update to the Maryland HIV/AIDS Epidemiological Profile contains only the five tables of adult/adolescent cases by jurisdiction. The full set of tables and figures by demographics and other descriptive variables will be available in the year-end fourth quarter report.

Laboratory Data

CD4 tests are measures of a person's immune system function. An HIV infected person is considered to have AIDS if they have less than 200 CD4 cells per microliter of blood. Viral load (VL) tests are measures of the amount of HIV in a person's body. The goal of HIV treatment is to have a very low number of copies of virus per milliliter of blood, below what the test can measure, which is called an undetectable level. Treatment recommendations are that a person in HIV medical care should have their CD4 and VL levels measured at least 2-3 times per year. We use the presence of these lab tests as an indicator that someone has been linked to care after diagnosis or is "in care".

Sources of Data

Information on HIV and AIDS diagnoses, including residence at diagnosis, vital status, and CD4 and HIV viral load test results are from the Maryland Department of Health and Mental Hygiene's Enhanced HIV/AIDS Reporting System (eHARS), March 31, 2011.

Population data are from the Maryland Department of Planning's intercensal population estimates for July 1, 2009.

Section II – Adult/Adolescent Cases by Jurisdiction

Table 1 – Adult/Adolescent HIV Cases by Jurisdiction, Diagnoses during 4/1/2009-3/31/2010

Age 13+ Population Estimate for 7/1/09, Number, Percent of Total, and Rate per 100,000 Population of Reported Adult/Adolescent HIV Cases, Age 13+ at HIV Diagnosis, with or without an AIDS Diagnosis, Diagnosed with HIV during 4/1/09-3/31/10 (Adult/Adolescent Reported HIV Diagnoses), Number and Percent by Jurisdiction of Adult/Adolescent Reported HIV Diagnoses with a First Reported CD4 Test Result in the 12 Months following HIV Diagnosis (First CD4 Test Result) and Median Count of the First CD4 Test Results, Percent by Jurisdiction of Adult/Adolescent Reported HIV Diagnoses with a Reported CD4 Test Result or a Reported HIV Viral Load Test Result in the 3 Months following HIV Diagnosis (Linked to Care), and Percent by Jurisdiction of Adult/Adolescent Reported HIV Diagnoses with an AIDS Diagnosis in the 12 Months following HIV Diagnosis (Late HIV Diagnosis), by Jurisdiction of Residence at HIV Diagnosis, as Reported by Name through 3/31/11

JURISDICTION OF RESIDENCE AT HIV DIAGNOSIS	Population Age 13+	Adult/Adolescent Reported HIV Diagnoses							
		No.	% of Total	Rate	First CD4 Test Result			% Linked to Care	% Late HIV Diagnosis
	No.				No. with Test	% with Test	Median Count		
Allegany	63,347	7	0.5%	11.1	6	85.7%	303	100.0%	42.9%
Anne Arundel	433,525	68	4.4%	15.7	44	64.7%	296	61.8%	33.8%
Baltimore City	531,524	486	31.6%	91.4	310	63.8%	337	55.3%	24.5%
Baltimore	666,607	231	15.0%	34.7	161	69.7%	371	62.3%	26.0%
Calvert	73,717	5	0.3%	6.8	3	60.0%	***	40.0%	20.0%
Caroline	27,358	1	0.1%	3.7	0	0.0%	--	***	***
Carroll	141,496	12	0.8%	8.5	8	66.7%	259	66.7%	33.3%
Cecil	83,281	5	0.3%	6.0	3	60.0%	***	60.0%	40.0%
Charles	116,049	28	1.8%	24.1	13	46.4%	219	46.4%	25.0%
Dorchester	27,191	5	0.3%	18.4	3	60.0%	***	80.0%	40.0%
Frederick	186,638	13	0.8%	7.0	10	76.9%	610	61.5%	15.4%
Garrett	25,250	0	0.0%	0.0	0	--	--	--	--
Harford	200,573	14	0.9%	7.0	11	78.6%	365	85.7%	21.4%
Howard	231,126	24	1.6%	10.4	15	62.5%	296	54.2%	29.2%
Kent	17,710	0	0.0%	0.0	0	--	--	--	--
Montgomery	798,063	159	10.3%	19.9	108	67.9%	283	62.9%	35.8%
Prince George's	685,607	382	24.8%	55.7	212	55.5%	274	50.5%	29.3%
Queen Anne's	40,067	2	0.1%	5.0	2	100.0%	***	***	***
Saint Mary's	83,968	3	0.2%	3.6	2	66.7%	***	***	***
Somerset	22,580	5	0.3%	22.1	5	100.0%	344	100.0%	40.0%
Talbot	31,225	2	0.1%	6.4	2	100.0%	***	***	***
Washington	121,826	11	0.7%	9.0	11	100.0%	385	72.7%	45.5%
Wicomico	78,215	17	1.1%	21.7	14	82.4%	400	76.5%	41.2%
Worcester	42,657	3	0.2%	7.0	3	100.0%	***	***	***
Corrections	--	55	3.6%	--	48	87.3%	451	76.4%	23.6%
TOTAL	4,729,600	1,538	100.0%	32.5	994	64.6%	324	58.2%	28.2%

*** Data withheld due to low population and/or case counts

Table 2 – Adult/Adolescent AIDS Cases by Jurisdiction, Diagnoses during 4/1/2009-3/31/2010

Age 13+ Population Estimate for 7/1/09, Number, Percent of Total, and Rate per 100,000 Population of Reported Adult/Adolescent HIV Cases, Age 13+ at HIV Diagnosis, with an AIDS Diagnosis, Diagnosed with AIDS during 4/1/09-3/31/10 (Adult/Adolescent Reported AIDS Diagnoses), and Average Years from HIV Diagnosis to AIDS Diagnosis, and Percent by Jurisdiction of Adult/Adolescent Reported AIDS Diagnoses with an HIV Diagnosis in the 12 Months preceding AIDS Diagnosis (Late HIV Diagnosis), by Jurisdiction of Residence at AIDS Diagnosis, as Reported by Name through 3/31/11

JURISDICTION OF RESIDENCE AT AIDS DIAGNOSIS	Population Age 13+	Adult/Adolescent Reported AIDS Diagnoses				
	No.	No.	% of Total	Rate	Years from HIV Diagnosis	% Late HIV Diagnosis
Allegany	63,347	3	0.4%	4.7	***	***
Anne Arundel	433,525	47	6.4%	10.8	2.8	55.3%
Baltimore City	531,524	244	33.4%	45.9	3.6	45.9%
Baltimore	666,607	134	18.3%	20.1	3.9	47.0%
Calvert	73,717	2	0.3%	2.7	***	***
Caroline	27,358	0	0.0%	0.0	--	--
Carroll	141,496	3	0.4%	2.1	***	***
Cecil	83,281	3	0.4%	3.6	***	***
Charles	116,049	10	1.4%	8.6	3.2	70.0%
Dorchester	27,191	3	0.4%	11.0	***	***
Frederick	186,638	5	0.7%	2.7	3.2	80.0%
Garrett	25,250	0	0.0%	0.0	--	--
Harford	200,573	9	1.2%	4.5	7.3	33.3%
Howard	231,126	9	1.2%	3.9	0.8	88.9%
Kent	17,710	1	0.1%	5.6	***	***
Montgomery	798,063	72	9.8%	9.0	1.7	79.2%
Prince George's	685,607	138	18.9%	20.1	1.8	76.1%
Queen Anne's	40,067	3	0.4%	7.5	***	***
Saint Mary's	83,968	4	0.5%	4.8	***	***
Somerset	22,580	1	0.1%	4.4	***	***
Talbot	31,225	2	0.3%	6.4	***	***
Washington	121,826	8	1.1%	6.6	3.8	50.0%
Wicomico	78,215	9	1.2%	11.5	1.8	66.7%
Worcester	42,657	1	0.1%	2.3	***	***
Corrections	--	20	2.7%	--	2.7	60.0%
TOTAL	4,729,600	731	100.0%	15.5	3.0	58.0%

*** Data withheld due to low population and/or case counts

Table 3 – Adult/Adolescent HIV Cases by Jurisdiction, Alive on 3/31/2010

Age 13+ Population Estimate for 7/1/09, Number, Percent of Total, and Rate per 100,000 Population of Reported Adult/Adolescent HIV Cases, Age 13+ at HIV Diagnosis, with or without an AIDS Diagnosis and Not Reported to Have Died as of 3/31/10 (Adult/Adolescent Living HIV Cases without AIDS, Living HIV Cases with AIDS, and Total Living HIV Cases), and Ratio of People per Case (1 case in every X people) for Total Living HIV Cases, by Jurisdiction of Residence at the Latter of HIV or AIDS Diagnosis, as Reported by Name through 3/31/11

JURISDICTION OF RESIDENCE AT DIAGNOSIS	Population Age 13+	Adult/Adolescent Living HIV Cases without AIDS			Adult/Adolescent Living HIV Cases with AIDS			Adult/Adolescent Total Living HIV Cases			
	No.	No.	% of Total	Rate	No.	% of Total	Rate	No.	% of Total	Rate	Ratio (1 in X)
Allegany	63,347	34	0.3%	53.7	38	0.2%	60.0	72	0.3%	113.7	879
Anne Arundel	433,525	406	3.3%	93.7	595	3.6%	137.2	1,001	3.5%	230.9	433
Baltimore City	531,524	5,623	46.2%	1,057.9	7,242	43.6%	1,362.5	12,865	44.7%	2,420.4	41
Baltimore	666,607	974	8.0%	146.1	1,449	8.7%	217.4	2,423	8.4%	363.5	275
Calvert	73,717	38	0.3%	51.5	57	0.3%	77.3	95	0.3%	128.9	775
Caroline	27,358	28	0.2%	102.3	26	0.2%	95.0	54	0.2%	197.4	506
Carroll	141,496	60	0.5%	42.4	64	0.4%	45.2	124	0.4%	87.6	1,141
Cecil	83,281	46	0.4%	55.2	61	0.4%	73.2	107	0.4%	128.5	778
Charles	116,049	139	1.1%	119.8	147	0.9%	126.7	286	1.0%	246.4	405
Dorchester	27,191	32	0.3%	117.7	67	0.4%	246.4	99	0.3%	364.1	274
Frederick	186,638	112	0.9%	60.0	148	0.9%	79.3	260	0.9%	139.3	717
Garrett	25,250	3	0.0%	11.9	4	0.0%	15.8	7	0.0%	27.7	3,607
Harford	200,573	137	1.1%	68.3	211	1.3%	105.2	348	1.2%	173.5	576
Howard	231,126	170	1.4%	73.6	208	1.3%	90.0	378	1.3%	163.5	611
Kent	17,710	14	0.1%	79.1	19	0.1%	107.3	33	0.1%	186.3	536
Montgomery	798,063	1,204	9.9%	150.9	1,742	10.5%	218.3	2,946	10.2%	369.1	270
Prince George's	685,607	2,259	18.5%	329.5	3,089	18.6%	450.5	5,348	18.6%	780.0	128
Queen Anne's	40,067	14	0.1%	34.9	29	0.2%	72.4	43	0.1%	107.3	931
Saint Mary's	83,968	42	0.3%	50.0	54	0.3%	64.3	96	0.3%	114.3	874
Somerset	22,580	19	0.2%	84.1	28	0.2%	124.0	47	0.2%	208.1	480
Talbot	31,225	23	0.2%	73.7	30	0.2%	96.1	53	0.2%	169.7	589
Washington	121,826	158	1.3%	129.7	125	0.8%	102.6	283	1.0%	232.3	430
Wicomico	78,215	106	0.9%	135.5	112	0.7%	143.2	218	0.8%	278.7	358
Worcester	42,657	33	0.3%	77.4	45	0.3%	105.5	78	0.3%	182.9	546
Corrections	--	510	4.2%	--	1,017	6.1%	--	1,527	5.3%	--	--
TOTAL	4,729,600	12,184	100.0%	257.6	16,607	100.0%	351.1	28,791	100.0%	608.7	164

Table 4 – CD4 Testing for Adult/Adolescent HIV Cases by Jurisdiction, Alive on 3/31/2010

Number of Adult/Adolescent Reported HIV Cases, Age 13+ at HIV Diagnosis, with or without an AIDS Diagnosis and Not Reported to Have Died as of 3/31/10 (Adult/Adolescent Total Living HIV Cases), Number and Percent by Jurisdiction of Adult/Adolescent Total Living HIV Cases with a Reported CD4 Test Result in the Previous 12 Months (Recent CD4 Test Result), and Median Count in Cells per Microliter and Percent Distribution by Jurisdiction of Counts for the Last Recent CD4 Test Results, by Jurisdiction of Residence at the Latter of HIV or AIDS Diagnosis, as Reported by Name through 3/31/11

JURISDICTION OF RESIDENCE AT DIAGNOSIS	Adult/Adolescent Total Living HIV Cases							
	No.	Recent CD4 Test Result						
		No. with Test	% with Test	Median Count	<200	200-349	350-499	500+
Allegany	72	41	56.9%	500	***	***	***	***
Anne Arundel	1,001	215	21.5%	361	34.4%	15.3%	16.7%	33.5%
Baltimore City	12,865	2,959	23.0%	377	26.3%	19.6%	20.0%	34.1%
Baltimore	2,423	667	27.5%	342	34.2%	16.3%	17.4%	32.1%
Calvert	95	10	10.5%	336	***	***	***	***
Caroline	54	7	13.0%	404	***	***	***	***
Carroll	124	22	17.7%	433	***	***	***	***
Cecil	107	14	13.1%	394	***	***	***	***
Charles	286	47	16.4%	261	40.4%	17.0%	17.0%	25.5%
Dorchester	99	18	18.2%	326	***	***	***	***
Frederick	260	53	20.4%	470	15.1%	15.1%	26.4%	43.4%
Garrett	7	2	28.6%	***	***	***	***	***
Harford	348	73	21.0%	359	35.6%	11.0%	24.7%	28.8%
Howard	378	78	20.6%	502	24.4%	12.8%	11.5%	51.3%
Kent	33	5	15.2%	398	***	***	***	***
Montgomery	2,946	664	22.5%	430	21.8%	19.3%	22.1%	36.7%
Prince George's	5,348	1,141	21.3%	400	25.2%	19.2%	18.8%	36.7%
Queen Anne's	43	7	16.3%	80	***	***	***	***
Saint Mary's	96	16	16.7%	301	***	***	***	***
Somerset	47	12	25.5%	459	***	***	***	***
Talbot	53	14	26.4%	524	***	***	***	***
Washington	283	130	45.9%	505	14.6%	15.4%	20.0%	50.0%
Wicomico	218	47	21.6%	451	***	***	***	***
Worcester	78	17	21.8%	424	***	***	***	***
Corrections	1,527	560	36.7%	377	25.5%	20.4%	19.6%	34.5%
TOTAL	28,791	6,819	23.7%	390	26.6%	18.5%	19.8%	35.2%

*** Data withheld due to low population and/or case counts

Table 5 – HIV Viral Load Testing for Adult/Adolescent HIV Cases by Jurisdiction, Alive on 3/31/2010

Number of Adult/Adolescent Reported HIV Cases, Age 13+ at HIV Diagnosis, with or without an AIDS Diagnosis and Not Reported to Have Died as of 3/31/10 (Adult/Adolescent Total Living HIV Cases), Number and Percent by Jurisdiction of Adult/Adolescent Total Living HIV Cases with a Reported HIV Viral Load Test Result in the Previous 12 Months (Recent Viral Load Test Result), Percent by Jurisdiction of the Last Recent Viral Load Test Results that were Undetectable, and the Median Detectable Result in Copies per Milliliter, by Jurisdiction of Residence at the Latter of HIV or AIDS Diagnosis, as Reported by Name through 3/31/11

JURISDICTION OF RESIDENCE AT DIAGNOSIS	Adult/Adolescent Total Living HIV Cases				
	No.	Recent Viral Load Test Result			
		No. with Test	% with Test	% Un-detectable	Median Detectable
Allegany	72	41	56.9%	63.4%	8,669
Anne Arundel	1,001	176	17.6%	34.1%	2,729
Baltimore City	12,865	2,339	18.2%	37.8%	4,846
Baltimore	2,423	552	22.8%	34.6%	7,944
Calvert	95	5	5.3%	***	***
Caroline	54	6	11.1%	***	***
Carroll	124	21	16.9%	33.3%	8,218
Cecil	107	12	11.2%	50.0%	200
Charles	286	38	13.3%	18.4%	1,903
Dorchester	99	9	9.1%	***	***
Frederick	260	39	15.0%	59.0%	4,424
Garrett	7	2	28.6%	***	***
Harford	348	58	16.7%	46.6%	10,807
Howard	378	62	16.4%	51.6%	33,204
Kent	33	2	6.1%	***	***
Montgomery	2,946	610	20.7%	60.8%	4,417
Prince George's	5,348	996	18.6%	49.9%	8,395
Queen Anne's	43	8	18.6%	***	***
Saint Mary's	96	12	12.5%	***	***
Somerset	47	10	21.3%	***	***
Talbot	53	7	13.2%	***	***
Washington	283	117	41.3%	73.5%	15,507
Wicomico	218	49	22.5%	28.6%	24,258
Worcester	78	10	12.8%	***	***
Corrections	1,527	333	21.8%	32.1%	5,271
TOTAL	28,791	5,514	19.2%	42.7%	5,841

*** Data withheld due to low population and/or case counts